United Nations A/HRC/32/23

General Assembly

Distr.: General
6 May 2016

Original: English

Human Rights Council
Thirty-second session
Agenda items 2 and 3
Annual report of the United Nations High Commissioner for Human Rights and reports of the Office of the High Commissioner and the Secretary-General

Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development

Analytical study on the relationship between climate change and the human right of everyone to the enjoyment of the highest attainable standard of physical and mental health

Report of the Office of the United Nations High Commissioner for Human Rights

Summary

The present analytical study on the relationship between climate change and the human right of everyone to the enjoyment of the highest attainable standard of physical and mental health is submitted pursuant to Human Rights Council resolution 29/15. In the study, the Office of the United Nations High Commissioner for Human Rights examines the impacts of climate change on human rights, particularly the right to health; related human rights obligations and responsibilities of States and other actors; and the elements and benefits of a rights-based approach to addressing climate change. It concludes with several recommendations.

GE.16-07407(E)

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I. Introduction

1. The present study is submitted pursuant to Human Rights Council resolution 29/15, in which the Council requested the Office of the United Nations High Commissioner for Human Rights (OHCHR) to conduct a detailed analytical study, in consultation with relevant stakeholders, on the relationship between climate change and the human right of everyone to the enjoyment of the highest attainable standard of physical and mental health.

2. On 21 August 2015, OHCHR circulated a note verbale and questionnaire to Member States requesting inputs for the study. Communications were also sent to other stakeholders, including civil society organizations, international organizations and national human rights institutions. These inputs were summarized in a conference room paper[1] prepared by OHCHR in advance of the Human Rights Council panel discussion on climate change and the right to health which was held on 3 March 2016.[2] The panel discussion, the above-mentioned written submissions and independent research have informed the study.

3. In the present study, OHCHR examines the impacts of climate change on human rights, particularly the right to health, related human rights obligations and responsibilities of States and other actors, and the elements and benefits of a rights-based approach to addressing the impacts of climate change on human health. It concludes with concrete recommendations for fulfilling human rights obligations, particularly those relating to health, in the context of climate change.

II. Impacts of climate change on enjoyment of the right to health

4. All human rights are universal, inalienable, indivisible, interdependent and interrelated. In the context of the right to health, these characteristics are eminently clear. Enjoyment of the right to health is contingent upon the availability of, inter alia, good quality health services, safe working conditions, adequate housing, food, water and sanitation, a healthy environment, and education, all on the basis of non-discrimination, as well as broad stakeholder participation in health policy formulation and implementation.[3] Climate change is real, human-made greenhouse gas emissions are its primary cause, and it contributes, among other things, to the increasing frequency of extreme weather events and natural disasters, rising sea levels, floods, heatwaves, drought and the spread of tropical and vector-borne diseases.[4] These extremes alter ecosystems, disrupt food production and water supply, damage infrastructure and settlements and increase morbidity and mortality. They are also responsible for the displacement of affected communities, among whom an important consequence is an increased incidence of poor mental and physical health. Thus, climate change directly and indirectly threatens the full and effective enjoyment of a range of human rights, including the rights to life, water and sanitation, food, health, housing, self-determination, culture and development.

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[1] The questionnaire, the original inputs received and their summary are available from www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/StudyImpact.aspx. In the present study, references to stakeholder inputs will be to "(Stakeholder name) input".

[2] The summary report of the panel is contained in A/HRC/32/24. Full statements are available from www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/StudyImpact.aspx.

[3] In paragraph 3 of its general comment 14 (2000) on the right to the highest attainable standard of health, the Committee on Economic, Social and Cultural Rights states that the right to health is closely related to and dependent upon the realization of other human rights.

[4] See Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report*.

5. Many of the negative impacts of climate change, such as loss of livelihood, reductions in crop yields, destruction of homes, increased food prices and food insecurity, are disproportionately borne by persons and communities already in disadvantageous situations owing to geography, poverty, gender, age, disability, or cultural or ethnic background, among others, who have historically contributed the least to greenhouse gas emissions. In the Fifth Assessment Report of the Intergovernmental Panel on Climate Change it is stated that people who are socially, economically, culturally, politically, institutionally or otherwise marginalized are especially vulnerable to climate change and also to some adaptation and mitigation responses.[5] For example, the biofuel agro-industry, hydroelectric power and forest conservation efforts can contribute to food insecurity and displacement. Persons, communities and even entire States that occupy low-lying coastal lands, tundra and Arctic ice, arid lands and other delicate ecosystems and territories at risk and rely upon such land for housing and subsistence, face substantial risks of displacement.

6. The World Health Organization (WHO) maintains that climate change is affecting health now, and will do so in the future. WHO describes the main health risks posed by climate change as more intense heatwaves and fires; increased prevalence of food-, water- and vector-borne diseases; increased likelihood of undernutrition; and lost work capacity in vulnerable populations. Additional potential risks include: breakdown in food systems; violent conflict associated with resource scarcity and population movement; and exacerbation of poverty. Climate change is expected to widen existing health inequalities, both between and within populations, and "the overall health effects of a changing climate are likely to be overwhelmingly negative".[6]

7. The Intergovernmental Panel on Climate Change confirms that the health of human populations is sensitive to shifts in weather patterns and other aspects of climate change. Direct effects on health occur "due to changes in temperature and precipitation and occurrence of heat waves, floods, droughts, and fires", while indirectly, "health may be damaged by ecological disruptions brought on by climate change (crop failures, shifting patterns of disease vectors), or social responses to climate change (such as displacement of populations following prolonged drought)".[7]

8. At its most extreme, climate change kills. A study commissioned by the Climate Vulnerable Forum linked 400,000 deaths worldwide to climate change each year.[8] WHO has estimated that between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year from malnutrition, malaria, diarrhoea and heat stress alone.[9] Taken by themselves, premature deaths from climate change would be ample cause for urgent action. Climate change, however, also endangers the underlying determinants of health at every level, acting as a threat multiplier. According to the *Lancet* Commission on Health and Climate Change, climate change threatens to undermine the last

[5] Intergovernmental Panel on Climate Change, *Climate Change 2014—Impacts, Adaptation, and Vulnerability: Summary for Policymakers*, p. 6.

[6] WHO input (see footnote 1 above); WHO, "Climate change and health", Fact sheet No. 266, available from www.who.int/mediacentre/factsheets/fs266/en/.

[7] K.R. Smith and others, "Human health: impacts, adaptation, and co-benefits", *Climate Change 2014: Impacts, Adaptation, and Vulnerability*, Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, p. 713.

[8] See DARA, *Climate Vulnerability Monitor: A Guide to the Cold Calculus of a Hot Planet*, 2nd ed. (2012).

[9] See WHO, *Quantitative Risk Assessment of the Effects of Climate Change on Selected Causes of Death, 2030s and 2050s* (2014).

half century of gains in development and global health.[10] One recent study found that "unmitigated warming is expected to reshape the global economy by reducing average global incomes roughly 23 per cent by 2100 and widening global income inequality, relative to scenarios without climate change".[11]

9. In the Human Rights Council panel discussion and in their written submissions, stakeholders overwhelmingly agreed that climate change posed a grave threat to human health, including the social and environmental determinants of health such as clean air, safe drinking water, sufficient food and secure shelter (see A/HRC/32/24). This is confirmed by expert analysis. For example, the World Bank has estimated that climate change may result in 1 billion to 2 billion people lacking an adequate supply of water.[12]

10. Negative impacts caused by climate change are global, contemporaneous and expected to increase exponentially according to the degree of climate change that ultimately takes place. Climate change, therefore, requires a global, rights-based response. The Human Rights Council, its special procedures mechanisms and OHCHR have consistently brought attention to the links between human rights and climate change through a series of resolutions, reports and activities on the subject, and by advocating a human rights-based approach.[13] A rights-based approach to climate change, as called for in various Council resolutions,[14] has the potential to inform and strengthen international, regional and national policy, promoting policy coherence, human well-being and sustainable development.

11. The importance of a rights-based approach and the right to health is explicitly recognized in the Paris Agreement, which calls on States to respect, promote and consider human rights, including the right to health, in their respective climate actions. Improved understanding of the key impacts of climate change on the health of all persons, particularly those in vulnerable situations, should inform a rights-based approach. Some of these impacts are detailed below.

A. Key impacts of climate change on health

1. Heat-related health impacts

12. According to WHO, projected increases in average seasonal temperatures and the frequency and intensity of heatwaves will contribute to increases in heat-related deaths among people aged over 65 years. Compared to a future without climate change, this is projected to result in nearly 38,000 additional deaths per year as of 2030 and nearly 100,000 additional deaths per year as of 2050. The largest impacts will be felt in South-East Asia.[15]

13. Heatwaves also contribute to respiratory and cardiovascular disease, and pose a health risk for people working outdoors or under ineffectively climate-controlled conditions. Occupational health risks include clinical heatstroke and death. Increasing temperatures also have implications for labour productivity and poverty reduction,

[10] See *Lancet* Commission on Health and Climate Change, "Health and climate change: policy responses to protect public health" (2015).

[11] M. Burke, S.M. Hsiang and E. Miguel, "Global non-linear effect of temperature on economic production", *Nature*, vol. 527, pp. 235-239 (12 November 2015).

[12] *World Development Report 2010: Development and Climate Change*, p. 5.

[13] See www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRClimateChangeIndex.aspx.

[14] See resolutions 7/23, 10/4, 18/22, 26/27 and 29/15.

[15] WHO, *Quantitative Risk Assessment*.

increasing the vulnerability of poor populations particularly in developing countries, many of which also have a weak health infrastructure.[16]

2. Impacts of air pollution

14. Air pollution is not caused by climate change, but climate change can exacerbate some forms of air pollution, and the sources of greenhouse gas emissions and air pollutants are often the same. Promoting access to clean energy would simultaneously reduce levels of greenhouse gas emissions and other harmful pollutants. Given that household air pollution and ambient air pollution are estimated to cause nearly 4.3 million deaths and 3.7 million deaths per year, respectively,[17] this would have substantial health benefits. Air pollutants have also been linked to health impacts, such as cardiovascular and respiratory disease and autism,[18] which can affect quality of life and labour productivity.

3. Extreme weather events and natural disasters

15. Direct impacts on health are caused by crises such as hurricanes, heatwaves, flooding, landslides, drought and wildfires, among others. Climate change contributes to the increasing frequency and intensity of these events and their associated health impacts, which include injury, disability, death and infectious disease transmission. For example, climate change is expected to enhance coastal flooding hazards through both a rise in sea levels and the increasing intensity and frequency of extreme weather events. In addition to mortality, flooding can cause injuries, infections, mental health problems, loss of income and crops, and damage to water and sanitation facilities and other infrastructure with resultant health impacts such as increased transmission of vector-borne diseases.[19]

16. Between 2005 and 2015, more than 1.5 billion people were affected by disasters, with women, children and people in vulnerable situations being disproportionately affected.[20] The Internal Displacement Monitoring Centre has estimated that over the past seven years 22.5 million people have been displaced each year by climate or weather-related disasters.[21]

17. The impacts of these crises are disproportionately felt by persons in vulnerable situations. For example, when there are gendered inequalities in access to economic, social and cultural rights, women suffer from higher rates of mortality as a consequence of natural disasters.[22] Further, a direct correlation has been observed between women's status in society and their likelihood of receiving adequate health care in times of disaster and environmental stress.[23]

4. Expanding disease vectors

18. Climate change helps expand disease vectors in a number of ways. Natural disasters destroy water and sanitation infrastructure, leading to outbreaks of water and insect-borne

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[16] United Nations Development Programme input.

[17] See WHO, "Climate change and health".

[18] See M.F. Cortez, "Air pollution exposure in pregnancy linked to autism in study" (Bloomberg, 18 December 2014).

[19] WHO, *Quantitative Risk Assessment*.

[20] United Nations Development Programme input.

[21] *Global Estimates 2015: People Displaced by Disasters*, p. 8 (July 2015).

[22] E. Neumayer and T. Plümper, "The gendered nature of natural disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981-2002", *Annals of the Association of American Geographers*, vol. 97 (3), pp. 551-566 (2007).

[23] See WHO, "Gender inequities in environmental health", document EUR/5067874/151 (2008).

diseases. Cholera, for example, thrives in a warming climate and insects and other carriers of disease are very sensitive to heat, humidity and rainfall. Climate change has greatly expanded the range of dengue fever and could do the same for malaria. More than half of the world's population currently lives in an area where *Aedes aegypti* mosquitoes, the principal vector for zika, dengue and chikungunya, are present. Warming temperatures threaten to expand this geographical range even further. In addition to the aforementioned diseases, panellists and survey respondents linked climate change to outbreaks of leptospirosis, diarrhoea, viral infections, meningitis, varicella, viral hepatitis, leishmaniasis and pertussis.[24]

19. Changes in the climate have multiple impacts on transmission of diseases, including lengthening their transmission season and expanding their geographic range. WHO has projected that these impacts will result in 48,000 additional deaths from diarrhoeal disease for children aged under 15 years and 60,000 additional deaths from malaria by the year 2030. These increases in mortality would have a disproportionate impact on persons living in Africa and South-East Asia.[25]

5. Nutrition

20. Climate change affects nutrition through changes in crop yields, loss of livelihood, increases in poverty, and reduced access to food, water and sanitation, among others. Elevated carbon dioxide levels cause climate change and directly decrease the protein, mineral and vitamin content of many staple food crops.[26] The World Bank recently estimated that a 2°C increase in average global temperature would put between 100 million and 400 million more people at risk of hunger and could result in over 3 million additional deaths from malnutrition each year.[27] By 2050, climate change is expected to result in an additional 24 million undernourished children.[28] WHO estimates that climate change will lead to nearly 95,000 additional deaths per year due to undernutrition in children aged 5 years or less by 2030.[29] Beyond starvation, undernutrition contributes to higher incidences of morbidity and mortality from diseases such as diarrhoea, pneumonia, malaria and measles. These impacts will be felt disproportionately in South Asia and sub-Saharan Africa. Climate change is projected to increase severe child stunting by 23 per cent in central sub-Saharan Africa and by 62 per cent in South Asia by 2050.[30]

6. Impacts on mental health

21. The consequences of climate change can have a profound impact on mental health through both its direct impact and its impact on social support systems and cultural traditions. People who experience the loss of homes or loved ones, or are exposed to life-threatening situations, face higher risks of developing stress and anxiety-related conditions,

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[24] Various inputs, including WHO; and G. Mercer, "The link between Zika and climate change", *The Atlantic* (24 February 2016).

[25] WHO, *Quantitative Risk Assessment*.

[26] L. Ziska and others, *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, U.S. Global Change Research Program (Washington, D.C., 2016), pp. 189-216.

[27] World Bank, *World Development Report 2010*, pp. 4-5.

[28] See G.C. Nelson and others, *Climate change: Impact on Agriculture and Costs of Adaptation*, International Food Policy Research Institute (Washington, D.C., 2009).

[29] WHO, *Quantitative Risk Assessment*.

[30] S.J. Lloyd, R. Sari Kovats and Zaid Chalabi, "Climate change, crop yields, and undernutrition: development of a model to quantify the impact of climate scenarios on child undernutrition", *Environmental Health Perspectives*, vol. 119, pp. 1817-1823 (2011).

including post-traumatic stress disorder and depression.[31] Climate impacts on mental health stem from the immediate physical effects of climate change and the more gradual effects on the environment, human systems and infrastructure.[32] For example, a study on the mental-health effects of climate change found that prolonged drought can lead to increasing farmer suicides, along with impaired mental health and stress.[33]

7. Other health impacts of climate change

22. As a threat multiplier, climate change has more impacts on health than can be addressed in the present report. It has, for example, been linked to displacement, forced migration, insecurity and violent conflict, all of which pose substantial health risks.[34] Declining biodiversity as a result of climate change also has an impact on the development of new medicines and access to medicines. Ecosystem damage has far-ranging implications for health, infrastructure, ecosystem services and traditional livelihoods. Climate change and associated natural disasters further increase burdens on Governments struggling to allocate limited resources to fulfil human rights obligations.

B. Disproportionate impacts on persons and groups in vulnerable situations

23. Negative impacts of climate change are disproportionately felt by the poor, women, children, migrants, persons with disabilities, minorities, indigenous peoples and others in vulnerable situations, particularly those living in geographically vulnerable developing countries. Populations living in small island developing States, on coasts, in high mountains, in deserts, at the poles and in other delicate ecosystems are most vulnerable to climate change.[35] For example, persons living in small island developing States currently suffer from climate-sensitive health problems and vulnerability to extreme weather events, which can have short and long-term health effects, including drowning, injuries, increased disease transmission and deterioration of water quantity and quality.[36] In extreme cases, rising sea levels threaten the very existence of some atoll nations the residents of which face imminent displacement and associated physical and mental health impacts.

24. The *Lancet* Commission on Health and Climate Change affirmed that certain population groups are particularly vulnerable to the health effects of climate change due, inter alia, to existing socioeconomic inequalities, cultural norms and intrinsic psychological factors.[37] The World Bank has emphasized that poor people are disproportionately affected by climate-related shocks and that climate change could result in an additional 100 million

[31] Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of health, statement made during the panel discussion on climate change and the right to health on 3 March 2016.

[32] See S. Clayton, C. Manning and C. Hodge, *Beyond Storms & Droughts: The Psychological Impacts of Climate Change* (Washington, D.C., American Psychological Association and ecoAmerica, 2014).

[33] S.K. Padhy and others, "Mental health effects of climate change", *Indian Journal of Occupational and Environmental Medicine*, vol. 19 (1), pp. 3-7 (2014).

[34] See statement by the Special Rapporteur on the right to health during the panel discussion; and S.M. Hsiang, M. Burke and E. Miguel, "Quantifying the influence of climate on human conflict", *Science*, vol. 341, issue 6151 (13 September 2013).

[35] See WHO, "Climate change and health".

[36] Smith and others, "Human health".

[37] *Lancet* Commission, "Health and climate change".

people living in extreme poverty by 2030.[38] Climate change increases the incidence and range of diseases like malaria and diarrhoea that disproportionately affect the poor. The Intergovernmental Panel on Climate Change has also highlighted the fact that health losses due to climate change-induced undernutrition occur mainly in areas that are already food insecure.[39] These types of impact increase health expenditures and ill-health among those who can least afford it, contributing further to the vicious cycle of poverty.

1. Health impacts and gender

25. Gender differences in health risks are likely to be exacerbated by climate change.[40] At the global level, natural disasters kill more women than men, with younger women being more vulnerable. Evidence suggests that differences are also present in vulnerability to indirect and long-term effects of climate change. For example, during droughts, the health of women and girls suffers disproportionately due to reduced water availability for drinking, cooking and hygiene, and food insecurity. The poorest households in the world typically rely on the most polluting energy sources for household activities such as cooking, which are often performed by women and girls. Use of such energy sources is associated with more than 4.3 million deaths each year.[41]

2. Health impacts on children

26. Many of the countries that are highly vulnerable to climate change also have higher proportions of children in their overall population. According to the United Nations Children Fund (UNICEF), the right to health of children is particularly affected by climate change. Children are especially vulnerable to changes in air and water quality, temperature, humidity, and vector-, water-, and food-borne infections due to their less developed physiology and immune systems. The majority of the existing global disease burden resulting from climate change occurs in children, and their main causes of death (diarrhoea, malaria, malnutrition) are likely to increase owing to the impact of climate change. Children are also more likely than adults to die because of natural hazards or succumb to malnutrition, injuries or disease in their aftermath.[42] The risk of extreme weather events and other climatic impacts can affect children's futures in a number of other significant ways. There has, for example, been a link to an increase in child marriage as a component of family survival strategies.[43]

27. Climate change has a disproportionate effect on marginalized and excluded individuals and groups, including those whose ways of life are inextricably linked to the environment, such as indigenous children. It exacerbates existing health inequities and threatens the very notion of intergenerational equity because its impacts will be felt most severely by children and future generations who have contributed little or nothing to its making.

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[38] See S. Hallegatte and others, *Shock Waves: Managing the Impacts of Climate Change on Poverty*, Climate Change and Development Series (Washington, D.C., World Bank, 2016).

[39] Smith and others, "Human health".

[40] See WHO, *Gender, Climate Change and Health* (2014); and *Mainstreaming Gender in Health Adaptation to Climate Change Programmes: User's Guide* (2012).

[41] See WHO, "Climate change and health".

[42] UNICEF input.

[43] Human Rights Watch input.

3. Health impacts on migrants

28. Environmental factors and climate change are critical drivers of migration. Although migration can be a strategy for adapting to climate change, it also contributes to increased health risks. According to the International Organization for Migration, health risks associated with migration or displacement are caused by reduced access to health-care facilities, goods and services; loss of social networks and assets; and other negative impacts on availability of and access to the underlying determinants of health. In the case of displacement owing to sudden onset disasters, infectious disease can be a major cause of mortality. Population movement due to natural disasters often occurs within vulnerable areas, posing major challenges to public health systems and access to health goods and services. Migrants may also suffer mental health impacts resulting from their displacement and the discrimination to which they may be subject.[44]

4. Health impacts on indigenous peoples

29. Climate change has an impact on the livelihoods and traditions of indigenous peoples, and can have particularly severe repercussions on their mental and physical health. For many indigenous peoples, their health is directly related to their immediate environment, which often serves as their primary source of water, food and medicine.[45] A recent study carried out in Latin America and the Caribbean found that indigenous communities face multiple difficulties in adapting to environmental changes which contribute to food insecurity and poor health. For instance, climatic changes in the Andean and sub-Andean region have resulted in variations in seasonality that affect the food security, social stability, health and psychological well-being of Aymara and Quechua peoples.[46]

30. Similarly, nomadic herders are greatly affected by changes in rainfall that threaten their herds, reduce milk production and cause the premature death of young cattle. Droughts also increase respiratory diseases, diseases related to malnutrition and waterborne diseases such as cholera, particularly affecting women and young children.[47] The Intergovernmental Panel on Climate Change has observed that health inequities rooted in race and ethnicity can increase vulnerability to climate change.[48] This is especially the case for many indigenous peoples who are at a greater risk of economic hardship, discrimination and poor health and often rely on vulnerable ecosystems for subsistence.

III. General human rights obligations and principles that apply in the context of climate change

31. Human rights are universal legal guarantees that protect individuals, groups and peoples against actions and omissions that interfere with their fundamental freedoms and entitlements. Human rights law obliges Governments (principally) and other duty bearers to respect, promote, protect and fulfil all human rights. Human rights are legally protected, and impose obligations in relation to actions and omissions, particularly of States but also of other duty bearers. Human rights obligations, standards and principles have the power to

[44] International Organization for Migration input.
[45] Statement by Hindou Ibrahim during the panel discussion on climate change and the right to health.
[46] See J. Kronik and D. Verner, *Indigenous Peoples and Climate Change in Latin America and the Caribbean* (Washington, D.C., World Bank, 2010).
[47] Statement by Hindou Ibrahim.
[48] Smith and others, "Human health".

shape policies for climate change mitigation and adaptation and hold countries accountable for implementation of climate commitments.

32. As the preceding analysis indicates, climate change caused by human activity has negative impacts on the full enjoyment of human rights, particularly the right to health. These impacts trigger obligations and responsibilities among all duty bearers.[49] States, for example, must limit anthropogenic emissions of greenhouse gases (for example, mitigate climate change), including through regulatory measures, in order to prevent to the greatest extent possible current and future negative human rights impacts of climate change. When climate mitigation efforts fail to adequately protect rights, States must ensure that appropriate adaptation measures are taken to protect and fulfil the rights of all persons, particularly those most endangered by the negative impacts of climate change.

33. The human rights framework requires that global efforts to mitigate and adapt to climate change be guided by relevant human rights norms and principles, including the rights to participation and information, transparency, accountability, equity and non-discrimination.

34. The Charter of the United Nations, the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and the Declaration on the Right to Development all make clear that human rights obligations of States require both individual action and international cooperation. Under these core human rights instruments, States acting individually and collectively are obligated to mobilize and allocate the maximum available resources for the progressive realization of economic, social and cultural rights, as well as for the advancement of civil and political rights and the right to development. Failure to adopt reasonable measures to mobilize resources to prevent foreseeable human rights harm caused by climate change breaches this obligation.

35. In the Declaration on the Right to Development, States are called on to establish, through their individual and collective actions, national and international conditions favourable to the realization of all human rights, including through international cooperation to provide developing countries with appropriate means and facilities to foster their comprehensive development. The International Covenant on Economic, Social and Cultural Rights further states that everyone has the right to enjoy the benefits of science and its applications. All States should, therefore, actively support the development and sharing of new climate mitigation and adaptation technologies.

36. The Declaration on the Right to Development also emphasizes that all human beings have a responsibility for development, and they should therefore promote and protect an appropriate political, social and economic order for development. The Guiding Principles on Business and Human Rights affirm that States have an obligation to protect human rights from harm by businesses, while businesses have a responsibility to respect human rights and to do no harm. Accordingly, all actors should be accountable for negative impacts caused by their activities and share responsibility for remedying them.[50] In particular, businesses must be accountable for their climate impacts and participate responsibly in climate mitigation and adaptation actions that fully respect human rights.

37. The human rights principles of equality and non-discrimination require action to address and remedy the disproportionate impacts of climate change on the most

[49] See OHCHR, Key messages on human rights and climate change (2015), available from www.ohchr.org/Documents/Issues/ClimateChange/KeyMessages_on_HR_CC.pdf.

[50] The legal obligations of States and enterprises to address climate change are subject to growing consensus and analysis. See, for example, the Oslo Principles on Global Climate Change Obligations (1 March 2015).

marginalized; to ensure that climate actions benefit persons, groups and peoples in vulnerable situations; and to reduce inequalities. Efforts to address climate change should not exacerbate inequalities within or between States. For example, indigenous peoples' rights should be fully reflected in line with the United Nations Declaration on the Rights of Indigenous Peoples and actions likely to have an impact on their rights should not be taken without their free, prior and informed consent. Care should also be taken to ensure that a gender perspective, including efforts to ensure gender equality, is included in all planning for climate change mitigation and adaptation. The rights of children, older persons, minorities, migrants and others in vulnerable situations must be effectively protected.

38. The disproportionate impact of climate change on persons in vulnerable situations raises concerns of climate justice, fairness, equity and access to remedy. The Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights and other human rights instruments make it clear that all persons who suffer human rights harm are entitled to access to effective remedies. Those affected by climate change, now and in the future, must have access to meaningful remedies, including judicial and other redress mechanisms. The obligations of States in the context of climate change and other environmental harm extend to all rights holders and to harm that occurs both inside and beyond boundaries. States should be accountable to rights holders for their contributions to climate change, including for failure to adequately regulate the emissions of businesses under their jurisdiction.

39. The Rio Declaration on Environment and Development, the Vienna Declaration and Programme of Action, and the outcome document of the United Nations Conference on Sustainable Development all call for the right to development to be fulfilled so as to meet equitably the developmental and environmental needs of present and future generations. The United Nations Framework Convention on Climate Change calls on States to protect future generations and take action on climate change on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. While climate change affects people everywhere, those who have contributed the least to greenhouse gas emissions (that is, the poor, children and future generations) are often those most affected. Equity in climate action requires that efforts to address climate change benefit people in developing countries, indigenous peoples, future generations and others in vulnerable situations.

40. The United Nations Framework Convention on Climate Change is subject to evolution and continuing negotiations regarding its implementation that take place during its annual Conference of the Parties. In these negotiations and related processes, the human rights principles of transparency, participation and accountability have an important role to play.[51] In order to ensure sustainable development and appropriate mechanisms for climate mitigation and adaptation, climate negotiations should be participatory and transparent. A rights-based framework should shape both the substantive commitments of Parties and the processes by which they are agreed and carried out.

41. The International Covenant on Civil and Political Rights and other human rights instruments, such as the Declaration on the Right to Development, guarantee all persons the right to free, active, meaningful and informed participation in public affairs. Particular care should be taken to comply with relevant human rights obligations relating to participation of persons, groups and peoples in vulnerable situations in decision-making processes and to ensure that adaptation and mitigation efforts do not adversely affect those that they should

[51] The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) highlights these principles in the context of environmental issues.

be benefiting. With regard to environmental issues, the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters provides a potential model for promoting good environmental governance and addressing the interlinked rights of access to information, public participation and access to justice.[52]

IV. Climate change and the human right to health

42. The protection of all human rights from the impact of climate change is fundamental for the protection of the right to health. Internationally, however, there is growing recognition of the specific interlinkages between climate change and the human right to health. Elements of this relationship are recognized in the text of the United Nations Framework Convention on Climate Change. Article 1 defines the adverse effects of climate change as changes in the physical environment or biotite resulting from climate change which have significant deleterious effects on human health and welfare. Article 3 calls upon Parties to the Convention to take measures to minimize the causes of climate change and minimize its adverse effects, including on health. Article 4 further calls for Parties to minimize the public health implications of mitigation and adaptation projects and measures they undertake, using relevant tools such as impact assessments. The first direct reference to human rights in the context of the Convention was made in 2010 in decision 1/CP.16, in which the Conference of the Parties refers to Human Rights Council resolution 10/4 in which the Council recognizes the adverse effects of climate change on the effective enjoyment of human rights. In the decision, it is emphasized that Parties to the Convention should fully respect human rights in all climate change-related actions.

43. Subsequent negotiations and discussions led to the inclusion of human rights language in the outcome reached at the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change. The outcome of the twenty-first session makes reference to the outcome of the sixteenth session, which included health as a priority sector for adaptation, and includes explicit references to the right to health in the preambles of both its decision and the Paris Agreement. The outcome emphasizes the importance of health co-benefits under the section relating to enhanced action prior to 2020. The Agreement also calls on States to respect, promote and consider human rights, including the right to health, in their respective climate actions.

44. The right to health is explicitly protected in a number of international human rights treaties, including the International Convention on the Elimination of All Forms of Racial Discrimination, the International Covenant on Economic, Social and Cultural Rights, the Convention on the Elimination of All Forms of Discrimination against Women, the Convention on the Rights of the Child, the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families and the Convention on the Rights of Persons with Disabilities. Countries that have ratified international legal instruments relating to climate change and/or the right to health are obliged to implement them and translate their obligations into national law.

45. States, therefore, have clear obligations to take measures to prevent and remedy the negative impacts of climate change on the right to health, including with regard to the environmental and social determinants of health. This was explicitly recognized by the Committee on the Rights of the Child in its general comment No. 15 (2013) on the right of the child to the enjoyment of the highest attainable standard of health, in which the Committee calls on States to take measures that address the dangers and risks that local

[52] United Nations Economic Commission for Europe input.

environmental pollution poses to children's health in all settings, and to implement environmental interventions that "should, inter alia, address climate change, as this is one of the biggest threats to children's health and exacerbates health disparities". Since climate change disproportionately affects the rights of persons living in vulnerable situations, the principles of equality and non-discrimination are particularly relevant to climate actions, requiring that States ensure that health facilities, goods and services are available, accessible, acceptable and of good quality. For example, in the context of climate displacement, the right to health requires that States enact and implement transparent and socially inclusive public health strategies that give priority to the needs of vulnerable and marginalized groups, including migrants.[53]

V. Applying a rights-based approach to health and climate action

46. The 2030 Agenda for Sustainable Development, the Paris Agreement, the Sendai Framework for Disaster Risk Reduction and the Addis Ababa Action Agenda of the Third International Conference on Financing for Development all reaffirm State commitments to a rights-based approach to development and climate action. These commitments must now be implemented. The Declaration on the Right to Development and the Statement of Common Understanding among United Nations agencies on Human Rights-Based Approaches to Development Cooperation and Programming offer a road map for doing so.[54] A rights-based approach analyses obligations, inequalities and vulnerabilities, and seeks to redress discriminatory practices and unjust distributions of power. It anchors plans, policies and programmes in a system of rights and corresponding obligations established by international law. The essential attributes of a human rights-based approach are the following:

(a) As policies and programmes are formulated, the main objective should be to fulfil human rights;

(b) The rights holders and their entitlements must be identified to strengthen their capacity to make claims and ensure their participation in relevant decision-making processes;

(c) The duty bearers and their obligations must be clarified to ensure their accountability;

(d) Principles and standards derived from international human rights law — especially the Universal Declaration of Human Rights and the core universal human rights treaties, should guide all policies and programming.

47. This approach should be integrated in any climate change adaptation or mitigation measure, such as the promotion of alternative energy sources, forest conservation, tree-planting projects and resettlement schemes. Individuals and communities affected must participate, without discrimination, in the design and implementation of the projects. They must have access to due process and to remedy if their rights are violated. Climate justice requires a rights-based approach to climate action founded on principles of equity, accountability, equality, inclusiveness and solidarity. These principles are essential in guiding support for developing countries, including financial and technological assistance. Faced with climate change, persons in vulnerable situations must have their rights

[53] International Organization for Migration input.

[54] See http://hrbaportal.org/the-human-rights-based-approach-to-development-cooperation-towards-a-common-understanding-among-un-agencies.

protected, obtain access to measures of adaptation and resilience, and receive the support of the international community.

48. Critically, it is not enough to simply focus on ensuring that action against climate change respects human rights. A rights-based approach requires States to take affirmative action to respect, protect, promote and fulfil all human rights for all persons. Failure to prevent foreseeable human rights harm caused by climate change, or at the very least to mobilize maximum available resources in an effort to do so, constitutes a breach of this obligation. Action should focus on protecting the rights of all those vulnerable to climate change. Human rights principles articulated in the Declaration on the Right to Development and other instruments call for such climate action to be both individual and collective and for it to benefit all persons, particularly the most marginalized.

49. The United Nations Framework Convention on Climate Change further elaborates upon the need for equitable climate action, calling on States to address climate change in accordance with their common but differentiated responsibilities and respective capabilities in order to benefit present and future generations.[55] State commitments require international cooperation, including financial, technological and capacity-building support, to realize low-carbon, climate-resilient and sustainable development, while also rapidly reducing greenhouse gas emissions. By integrating human rights in climate actions and policies, and empowering people to participate in policy formulation, States can promote sustainability and hold duty bearers accountable for their actions. This, in turn, will promote consistency, policy coherence and the enjoyment of all human rights, including the right to health.

50. A human rights framework for realizing the right to health calls for national Governments to ensure that health facilities, goods and services are available in sufficient quantity, and are physically accessible and affordable on the basis of non-discrimination. Health facilities, goods and services are also required to be gender sensitive and culturally appropriate, scientifically and medically appropriate, of good quality, and respectful of medical ethics. All relevant stakeholders should be able to participate, through transparent processes, in the development and implementation of health policies. Health authorities and other duty bearers should be held accountable for meeting human rights obligations in the area of public health, including through the possibility of seeking effective remedies via complaints mechanisms or other avenues for redress. A human rights-based approach also takes account of, and incorporates, the many factors which affect the enjoyment of the right to health — the underlying determinants of health — such as access to safe and potable water and adequate sanitation, an adequate supply of safe food and nutrition, healthy occupational and environmental conditions, and adequate housing.[56]

51. In addition to being a legal and ethical imperative, a rights-based approach to climate action counters the negative impacts of climate change on health and prevents mitigation and adaptation efforts from undermining all human rights. Accountability, transparency and meaningful and informed participation can strengthen mitigation and adaptation efforts, making them more ambitious, effective, inclusive, responsive and collaborative while ensuring that they leave no one behind. While the impact of climate change will be overwhelmingly negative on health, tackling climate change could also be an important global health opportunity.[57] WHO has noted that there is a tremendous

[55] See also the Paris Agreement.

[56] See Committee on Economic, Social and Cultural Rights general comment No. 14 (2000) on the right to the highest attainable standard of health, paras. 4 and 11.

[57] *Lancet* Commission, "Health and climate change".

potential for health co-benefits from policies that address climate change.[58] A rights-based approach has a crucial role to play in identifying and implementing effective climate actions that benefit people and the planet.

52. For instance, a study by the World Resources Institute has found that legal recognition of community forest rights can substantially reduce carbon dioxide emissions from deforestation.[59] Importantly, such actions also protect traditional livelihoods and access to traditional foods and medicines with positive health benefits for local communities. In this way, a rights-based approach has the potential to address cross-cutting issues relating to health, sustainable development, natural resource management and climate change, while empowering the most marginalized. It is imperative for States to employ rights-based approaches across all aspects of climate action at the international, regional, national and local levels, if they are to successfully meet their human rights obligations and effectively address the threat posed by climate change.

VI. Conclusions and recommendations

53. Participants in the Human Rights Council panel discussion on climate change and the right to health and those who responded to the call for inputs to the present study overwhelmingly agreed that climate change has substantial negative impacts on the enjoyment of the highest attainable standard of physical and mental health. In order to fulfil the right to health, Governments, civil society, the private sector, international partners and individuals must collaborate to protect the environment and achieve sustainable development that meets the needs of present and future generations.

54. Since climate change directly contributes to the violation of human rights, States have an affirmative obligation to take measures to mitigate climate change; to prevent negative human rights impacts; to ensure that all persons, particularly those in vulnerable situations, have adequate capacity to adapt to changing climactic conditions; and to regulate the private sector in order to mitigate its contribution to climate change and ensure respect for human rights.

55. The negative health impacts of climate change will increase exponentially with every incremental increase in warming. Limiting warming to the greatest extent possible and achieving the target of 1.5°C above pre-industrial levels should therefore be the objective of all climate action. Beyond setting and achieving an ambitious goal, protecting the right to health from climate change will require climate mitigation and adaptation measures that are rights-based, effective and participatory and benefit the vulnerable.

56. This starts with effective laws and policies at all levels and ends with effective monitoring and implementation. Many States reported that they had constitutional protection of health and the environment and employed concrete measures focusing on mitigation of and adaptation to the negative impacts of climate change on human health. Further analysis of those policies and actions is needed to identify and promote good practices. States should integrate policies on health and human rights in their national action plans for climate mitigation and adaptation, in the intended nationally

[58] See WHO, "Promoting health while mitigating climate change", Technical briefing for the World Health Organization Conference on Health and Climate Change (27-29 August 2014).

[59] See C. Stevens and others, *Securing Rights, Combating Climate Change: How Strengthening Community Forest Rights Mitigates Climate Change* (World Resources Institute, 2014).

determined contributions submitted to the United Nations Convention on Climate Change, and in other climate policies and actions at all levels. They should improve cross-sectoral cooperation and design specialized frameworks for tackling threats to health relating to climate change.

57. To ensure climate-resilient populations, States should also take measures to develop sustainable and resilient health systems and infrastructure, including for water and sanitation, and to fulfil their minimum core obligations with regard to the right to health,[60] including by promoting universal health coverage and social protection floors.

58. Effective rights-based climate action requires open and participatory institutions and processes, as well as accurate and transparent measurements of greenhouse gas emissions, climate change, including its impacts. States should make early-warning information regarding climate effects and natural disasters publicly available and easily accessible. Adaptation and mitigation plans should be public and transparently financed and designed in consultation with the groups affected. Vulnerable groups must participate in efforts to integrate human rights in climate policies and be empowered to address climate change and its impacts, including throughout relevant processes and mechanisms relating to the United Nations Framework Convention on Climate Change. Health and climate education should be promoted to facilitate the meaningful, informed participation of those groups. Impact assessments should ensure that climate actions respect human rights, particularly the right to health.[61] Further, States should develop and monitor relevant human rights indicators in the context of climate change; keep disaggregated data to track the varied impacts of climate change across demographic groups; and enable effective, rights-compliant climate action.

59. Climate mitigation and adaptation efforts should place people at the centre, be gender sensitive, and ensure the rights of persons, groups and peoples in vulnerable situations, including women, children, indigenous peoples, migrants and the poor. States should develop a rights-based approach to environmental migration by integrating climate change and migrants' health into their development, health and disaster risk reduction and management plans and policies. To ensure gender equality and women's empowerment, States should promote the full and equal participation of women in decision-making processes, including those relating to disaster risk reduction and resilience; and improve women's access to education, land, technologies, credit, social protection and resilient health systems. Measures should also be taken to protect indigenous peoples' traditional knowledge, lands and resources and ensure their participation in relevant decision-making processes.

60. Health protection should be a priority for investment in climate adaptation and mitigation. Efforts should be targeted to capitalize on climate and health co-benefits that lead to direct reductions in the burden of ill-health, enhance community resilience, alleviate poverty and address global inequity. These could include, for example, measures that: reduce local emissions of air pollutants from energy systems through improved energy efficiency and cleaner energy sources; promote active transport systems leading to lower emissions and better health; shift consumption away from animal products towards more sustainable and healthier diets, provide access to reproductive health services, including modern family planning; and protect

[60] See Committee on Economic, Social and Cultural Rights general comment No. 14, para. 43.

[61] See article 4 of the United Nations Framework Convention on Climate Change (committing States to consider the public health impacts of their mitigation and adaptation activities).

community landownership.[62] Conversely, it must be ensured that climate action does not adversely affect human rights as, for example, might sometimes be the case in relation to biofuels and food security or displacement and hydroelectric dams.

61. States should enhance cooperation and development assistance on the basis of principles of equity and common but differentiated responsibility to ensure adequate funding of, and research into, adaptation measures that help the poorest countries and those persons, groups and peoples most at risk. Specific measures could include: equitable access to technology, including, if necessary, the lowering of intellectual property standards and facilitation of technology transfer; targeted poverty reduction efforts; and establishment of a special climate justice fund to finance climate mitigation and adaptation policies with funds from both the public and private sectors. Resources should be mobilized to enhance research and development relating to, inter alia, data collection for the implementation of efficient and timely responses to the negative impacts of climate change on determinants of health; diagnosis and treatment of diseases and control of disease vectors; climate-resilient crops; renewable sources of energy and energy conservation; and linkages between ecological health, animal health and human health. Climate finance and adaptation should support effective measures that bring health co-benefits particularly to persons in vulnerable situations and in developing countries. Climate finance should be innovative, long term and additional to existing funding for poverty reduction and sustainable development.

62. It is also critical that mechanisms to address loss and damages be strengthened and that both the public and private sectors be accountable for their actions. National human rights institutions, for example, can combine analysis and action to promote remedies for individual violations of human rights and systematic deficiencies relating to climate change. Courts and other legal institutions must also play a role in protecting the most vulnerable, ensuring accountability and providing access to remedy.

63. Emergency responses need to be comprehensive and cover a broad range of areas such as mental health, sexual and reproductive health, disability, loss and damages. Immediate social protection measures, such as price subsidies, food programmes, employment programmes, retraining programmes, loans for vulnerable populations and special packages for children's nutrition and for sexual and reproductive health, should be included in emergency assistance. States should establish, inter alia, early warning systems; utilize community-based monitoring, including traditional knowledge; enhance emergency response capabilities; and improve coordination in addressing climate migration and protecting migrants' right to health in disaster risk reduction and adaptation.

64. Human rights policies, climate change policies and development policies, as well as relevant experts, all need to support rights-based climate action. Instruments like the Geneva Pledge for Human Rights in Climate Action can provide a vehicle for furthering this objective. States that have not done so should consider signing the Pledge. The human rights machinery should be mobilized to monitor climate commitments, including through consideration of the human rights impacts of climate change during the universal periodic review and by treaty bodies and Human Rights Council special procedure mandate holders. OHCHR, the secretariat of the United Nations Framework Convention on Climate Change and WHO should work together, along with other relevant partners and States, to develop tools and promote climate

[62] See, for example, Smith and others, "Human health".

policies that benefit people and the planet and further the implementation of relevant commitments such as those in the Addis Ababa Action Agenda, the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction and the Paris Agreement.